

# Open learning platform for the Open Geospatial Community

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**Abstract:** The ELOGeo Project is a UK Government-funded project led by the Nottingham Geospatial Institute at the University of Nottingham in partnership with the Mimas Centre of Excellence at the University of Manchester. Its objective is to enable the wider community (not just GIS experts) to make use of open source geospatial tools for solving real world problems. Currently, there is a steep learning curve for new users to understand and use these technologies and if a general take-up of them is to be achieved it is necessary that an open, interactive, user friendly learning framework is developed. This project addresses the provision of infrastructure for education, transfer of knowledge and training of users and researchers on the effective use of open geospatial services, by providing a set of methodologies, tools and materials. The courses target the researchers, non-geospatial experts and general public who want to use open data, standards and tools. The framework can be accessed at <http://elogeo.nottingham.ac.uk>

## Introduction

The ELOGeo Project was launched in July 2011 and within a short period had built a strong community of contributors and users. The main users of ELOGeo are lecturers, students, researchers and also those from related sectors in government, NGOs and charities. The Project has proven successful in establishing an infrastructure and a community for sharing and disseminating knowledge of emerging open source geospatial software, data and standards. The ELOGeo platform and learning materials are freely available to anyone with Internet access, and even the framework itself is developed on open source platforms (Fig 1).



Figure 1- Interface of the ELOGeo repository

## The ELOGeo Repository

The learning materials are classified and archived in the repository ([elogeo.nottingham.ac.uk/xmlui](http://elogeo.nottingham.ac.uk/xmlui)). The users can search and find their materials through different searching and listing tools, including full-text search. They also can register/login to the system to manage their uploads. The administrators can run the workflow of accepting/rejecting/modifying the uploaded materials as well as administrating the user accounts (Pourabdollah et al, 2012).

From the system launch to February 2013 (20 months), ELOGeo had 89 registered users, with 69 material items. In this period there were nearly 68,000 accesses to the materials (a monthly average of 3400) and just over 11,200

performed searches (monthly average, 560) which indicates the strong demand from the targeted community (Fig 2).

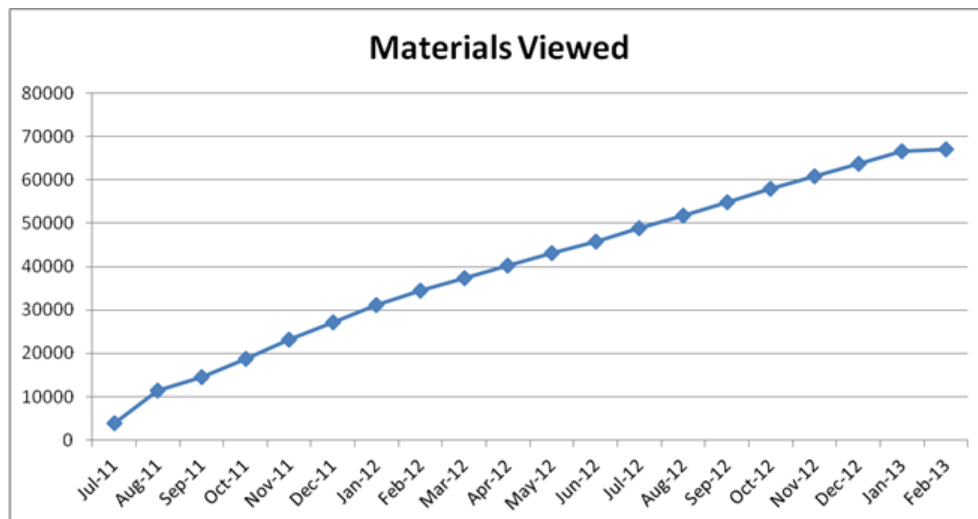


Fig 2 : Shows the growth of materials views over a 20 month period

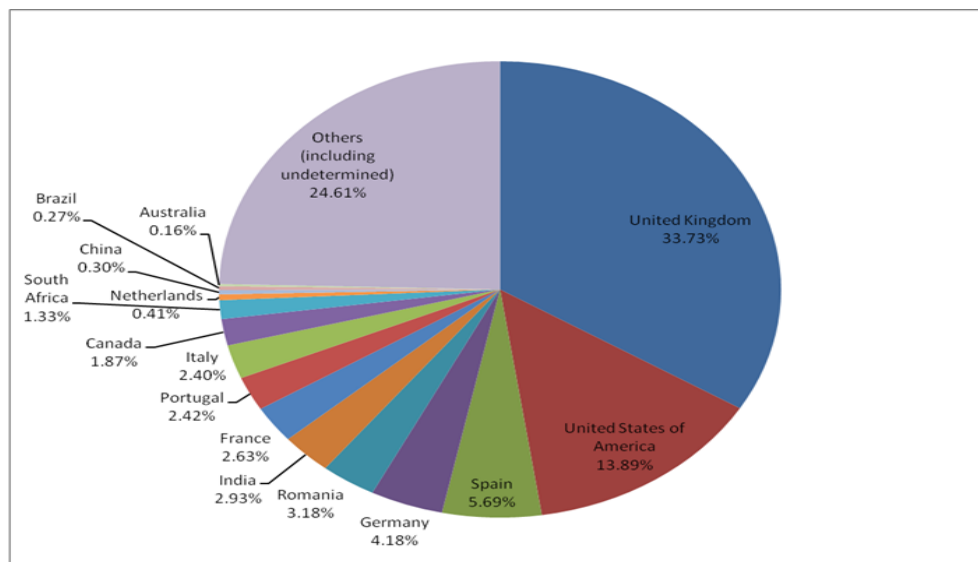


Fig 3 – Global geographical distribution of users

Also there was global geographical distribution of the users as evident from Fig 3. The greatest number of users were from UK (nearly 34 percent), USA (nearly 14 percent), Spain (6 percent) etc.

System users can create and access the wiki-styled materials at [www.osmgb.org.uk/elogeowiki](http://www.osmgb.org.uk/elogeowiki). Users will be able to take advantage of knowledge sharing in a wiki environment, including the ability to interlink, discuss and access to the previous editions as necessary. Moreover, administrators can approve/reject the changes made and manage the users' accounts. The wiki can act as a knowledgebase on its own, as well as providing a conceptual interlinked layer over the ELOGeo repository.

### **Lessons Learnt**

The open geospatial world is a very fast growing and changing, thus the crowd and community involvement has been considered as the key factor for the sustainability of the ELOGeo. The ELOGeo experience has been a motivation of seeking for sustainability solutions for a crowd-sourced repository. Our aim has been to support the community with frequent knowledge updates and access to updated materials. The biggest risk for ELOGeo is an accumulation of aged and outdated materials. The challenge ahead is to find means to present up-front current material while curating and deprecating older content. We envisage that people will continue to contribute materials and that the user base will continue to increase in the short-term as we still have offers of content to consolidate into actual material. Sustainability of content will come from keeping contributors and users involved in deciding when material should be de-emphasised in the repository.

According to the feedbacks collected from the ELOGeo development, it has been initially identified that the crowd sourcing can support the sustainability if the following issues are met:

- Repository openness: The openness must be kept as the key element.
- Materials Quality: The materials quality (in terms of being updated, commented/ranked and interactively developed) must be maintained and improved constantly.
- The Repository Structure: The structure of the repository and the different ways that materials can be searched or retrieved by different users must be enhanced.

### **Conclusions and Future Work**

ELOGeo was implemented as a community led project with support, for example, from the Open Source Geospatial Foundation and International Cartographic Association. Strong growth is being recorded in materials contributions and the user base. In future, we will be extending this to add more functionality to the system such as developing enhanced materials. Xerte will be used as a medium for developing the interactive materials. Xerte is an open-source development originally created and now led by the University of Nottingham. The Xerte materials will be embedded as a type of materials that can exist within the ELOGeo repository.

We also aim to develop additional mapping functionality in Xerte for this, for example exploring Mapstraction (a library that provides a single API to access various Javascript mapping APIs to enable switching from one mapping provider to another as smoothly as possible). We also aim to explore the Ordnance Survey's OpenSpace framework as an alternative. Having rich interactive mapping tools embedded in Xerte will greatly enhance the quality of teaching materials development for spatially related studies across all disciplines. For example to extend the development of Xerte Online Toolkits to include facilities to provide functionality to display maps. This will benefit not only lecturers in GIS but a wide variety of disciplines from medicine, history, archaeology, town planning etc who use spatial data and concepts in their teaching. In future we also aim to explore research in how we can use crowd sourced techniques for long term sustainability of learning materials.

## **References**

Pourabdollah A, Anand S, Morley J, Jackson M "GI-BoK - Open Source GIS Education perspective" Views on the Body of Knowledge workshop, 15th AG-ILE International Conference on Geographic Information Science, Avignon